

11 (A) The function of the red blood cells is to carry oxygen to the cells.

(b) The function of the leucocytes seems to be the destruction and devouring of invading bacteria injurious to the health of the organism.

(c) The plasma is a vehicle for carrying all properties of the blood except the oxygen and a certain amount of carbon dioxide, which are carried by the red cells. It supplies to the cells water and food substances and receives from them their waste products.

12. The functions of the blood are:

1. The breathing function which carries carbon ^{dioxide} from the heart and oxygen to it.
2. Nutritive function which carries food to tissues.
3. The excretory function which carries wastes from the body.
4. It regulates the body temperature.
5. Protective function because blood actually manufactures antitoxin which will fight diseases.
6. Has function of maintaining liquid content which is carried to tissues by it.
7. Transports hormones.

Complete the questions and hand in again

13/ Disorders of the arteries and veins may be avoided by adequate rest and relaxation, by the adoption of activity to one's strength, by appropriate management of powerful emotions, and by the avoidance of self-made as well as external poisons.

Respiration.

1. Diagram and label the essential mechanisms of (a) external respiration.
(b) internal ".
2. What principle governs the exchange of gases during respiration?
3. What do the ribs, intercostal muscles + diaphragm have to do with respiration.
4. What causes the air to enter or leave the lungs when you breathe?
5. What has the blood to do with respiration?
6. Explain: Tidal, supplementary, and residual air, vital capacity.
7. How is respiration controlled?
8. What can you do to protect your breathing apparatus from (a) infection
(b) Irritation
(c) poisoning.
9. How can you help to prevent transmission of respiratory infections?
10. What have the tonsils & adenoids to do with respiration?
11. How do the temp. & humidity of the air you breathe affect respiratory health?

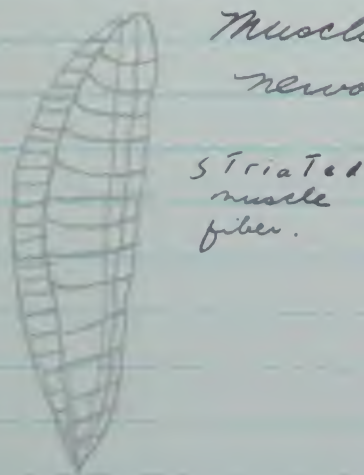
Physiology - Chp. II

and every cell has its own particular function.
 Variety: glands, blood, nervous, sex, etc.



Nerve cell connects with other cells, and muscles.

Muscle fiber under control of nervous system. Voluntary.

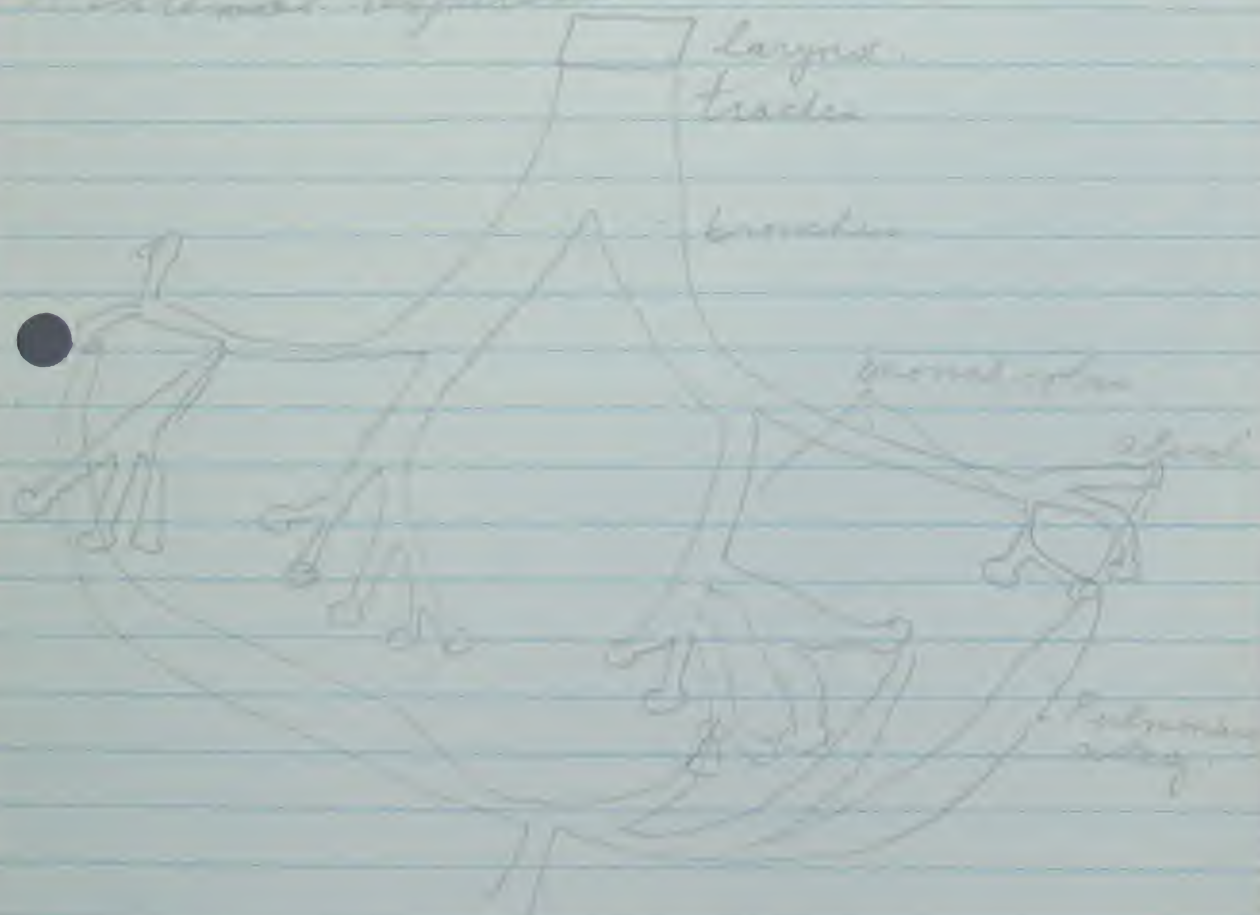


Each cell contains 48 Chromosomes. It's in 48 or diploid number.
 The Chromatin meshwork of the nucleus.
 It absorbs dye. Every cell has 48 except the sex cells - the sperm & the ovum, which are produced by the sex organs - ovary, and testes. These sex cells carry a haploid no. of Chrom. which means they have 24

Chrom - $\frac{1}{2}$ of. Why true? Formation of
new person is initiated by union of 1 ovum &
1 sperm. Diploid no. rec'd by person

2. Paramecia have the tendency to move from areas of high pressure to areas of low pressure. In this case, you move independently of whether you are O_2 or CO_2 . } by osmosis

1a) External respiration



1b) Internal respiration

3. At the end of inhalation the inter-
costal muscles and the diaphragm are
relaxed and the following is position of
rib & diaphragm



- Diaphragm -

During inhalation the intercostal muscles
& diaphragm contract, raising ribs &
lowering diaphragm thus enlarging
space for lungs & air.



- Diaphragm -

The ribs protect the organs of the thoracic
cavity. The diaphragm is a muscular
partition separating the thoracic cavity
making room for lungs & heart.

If the thoracic cavity is enlarged
it causes a partial vacuum &
air rushes in & deflates the

pressure caused by the outside air.
After inhalation there is a relaxation
of the ^{muscles} the contraction of the
elasticity of the thoracic wall & the
gravity. The chest returns to its former
position & the intrathoracic pressure forces
out the inhaled air. The ^{action of the} lungs is passive.

1. Inhalation & exhalation: Breathing: external
respiration. The exchange of gases between
the lungs & the pulmonary arteries
and veins & between the capillaries
& the tissues of the body is called inter-
nal respiration. The hemoglobin in the blood
combines with the O_2 in the lungs. The
 O_2 in the blood stream is pushed into
the lungs. The hemoglobin gives up the O_2
wherever it is needed in the body. The
blood carries the CO_2 from all parts
of the body to the lungs. The tissues
of the body breathe by means of the blood.

1. Tidal air - the air breathed in & out
Supplementary air - the air which can be
forced in after the tidal air has been
breathed out. The air which cannot be forced in
Tidal air
Supplementary air } vital capacity
Residual air

1. CO_2 acts as a hormone because
it stimulates the respiratory system by
means of a nerve which runs to the
Medulla.

11. The air must be saturated with water when it reaches the lungs as the tissues are very delicate. The tissues of the upper respiratory system are not so delicate & they give up water to the air. If the air is too dry the tissues will become very dry causing irritation. The air must be warm as cold in the lungs might cause a chill.